

ABSTRACT OF THE DISCLOSURE

A network management system provides distributed task and data processing services to management processes by employing distributed autonomous agents. The network management system includes management units that are associated with network elements of the network. The management units store a dynamically updated model of the corresponding network elements. The model is used to implement data gathering tasks as well as network control operations. The model includes autonomous agents, each modeling a network element. The agents communicate with one another and cooperate to facilitate the implementation of a distributed algorithm. The management system provides the management processes with data management as well as one step network control operation services. Accordingly, the management processes do not process a large amount of data or execute step-by-step network control operations.